

IN THE CLAIMS

The following is a clean version of the entire set of pending claims. In accordance with 37 CFR 1.121 (c)(1)(ii), the Version with Markings to Show Changes Made provides marked up versions of the claims containing the newly introduced changes.

88. A method of generating and using one or more database systems, the method comprising:

accessing at least one description, wherein the description describes a database system;

populating a metadata schema with the description;

automatically generating the database system according to the populated metadata schema; and

using the database system according to the populated metadata schema.

89. The method of Claim 88, wherein automatically generating the database system includes:

automatically generating an actual table schema for the database system according to the populated metadata schema; and

automatically populating the actual table schema with the data.

90. (Amended) The method of Claim 88, wherein automatically generating the database system includes:

automatically generating one or more aggregates according to the populated metadata schema; and

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automatically generating one or more query mechanisms according to the populated metadata schema.

91. The method of Claim 88, wherein using the database system includes:
querying the database system; and
generating one or more reports with the database system.

92. (Amended) The method of Claim 91, further comprising:
querying the database system in response to a query request received from one or more client computers over a computer network;
sending the results of the querying to one or more of the client computers;
generating the reports in response to a report request received from one or more of the client computers over a computer network; and
sending the results of the report generating to one or more of the client computers.

93. The method of Claim 88, wherein automatically generating the database system includes:
automatically extracting data from one or more source databases according to the populated metadata schema; and
automatically populating the database system with the data according to the populated metadata schema.

94. The method of Claim 93, wherein automatically populating the database system includes automatically converting the data into one or more data formats according to the populated metadata schema.

95. The method of Claim 88, further comprising:

receiving the description from a client computer over a computer network.

96. The method of Claim 88, further comprising:

accessing a modified description, wherein the modified description includes the description and one or more modifications to the description;

re-populating the metadata schema with the modified description;

automatically modifying the database system according to the re-populated metadata schema; and

using the database system according to the re-populated metadata schema.

97. The method of Claim 96, wherein data in the database system is not lost during the modification.

98. The method of Claim 96, wherein automatically generating the database system includes:

automatically extracting data from one or more source databases according to the re-populated metadata schema;

automatically converting the data into one or more modified data formats according to the re-populated metadata schema; and

automatically populating the database system with the data according to the populated metadata schema.

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99. The method of Claim 96, wherein automatically modifying the database system includes:

automatically modifying the actual table schema for the database system according to the re-populated metadata schema; and

automatically populating the modified actual table schema with the data.

100. (Amended) The method of Claim 96, wherein automatically modifying the database system includes:

automatically modifying one or more aggregates according to the re-populated metadata schema; and

automatically modifying one or more query mechanisms according to the re-populated metadata schema.

101. The method of Claim 99, wherein automatically modifying the actual table schema includes modifying one or more tables in the actual table schema.

102. The method of Claim 101, wherein modifying the tables includes any of the following acts:

adding one or more of the tables;

deleting one or more of the tables;

adding one or more columns to the tables; and

deleting one or more of the columns from the tables.

103. The method of Claim 102, wherein the tables include any of the following: one or more fact tables, one or more dimension tables, or one or more aggregate tables.

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104. The method of Claim 96, wherein automatically modifying the database system further includes modifying one or more indices in the database system.

105. A computer system comprising:

at least one server computer; and

a computer program executable by the server computer, wherein the computer program includes computer instructions for:

accessing at least one description, wherein the description describes a database system;

populating a metadata schema with the description;

automatically generating the database system according to the populated metadata schema; and

using the database system according to the populated metadata schema.

106. The computer system of Claim 105, wherein the computer program further includes computer instructions for:

automatically generating an actual table schema for the database system according to the populated metadata schema; and

automatically populating the actual table schema with the data.

107. The computer system of Claim 105, wherein the computer program further includes computer instructions for:

automatically generating one or more aggregates according to the populated metadata schema; and

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automatically generating one or more query mechanisms according to the populated metadata schema.

108. The computer system of Claim 105, wherein the computer program further includes computer instructions for:

querying the database system; and
generating one or more reports with the database system.

109. The computer system of Claim 108, wherein the computer program further includes computer instructions for:

querying the database system in response to a query request received from one or more client computers over a computer network;
sending the results of the querying to one or more of the client computers;
generating the reports in response to a report request received from one or more of the client computers over a computer network; and
sending the results of the report generating to one or more of the client computers;

110. The computer system of Claim 105, wherein the computer program further includes computer instructions for:

automatically extracting data from one or more source databases according to the populated metadata schema; and
automatically populating the database system with the data according to the populated metadata schema.

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111. The computer system of Claim 110, wherein the computer program further includes computer instructions for:

automatically converting the data into one or more data formats according to the populated metadata schema.

112. The computer system of Claim 105, wherein the computer program further includes computer instructions for:

receiving the description from a client computer over a computer network.

113. The computer system of Claim 105, wherein the computer program further includes computer instructions for:

accessing a modified description, wherein the modified description includes the description and one or more modifications to the description;

re-populating the metadata schema with the modified description;

automatically modifying the database system according to the re-populated metadata schema; and

using the database system according to the re-populated metadata schema.

114. The computer system of Claim 113, wherein the computer program further includes computer instructions for:

automatically extracting data from one or more source databases according to the re-populated metadata schema;

automatically converting the data into one or more modified data formats according to the re-populated metadata schema; and

automatically populating the database system with the data according to the populated metadata schema.

115. The computer system of Claim 113, wherein the computer program further includes computer instructions for:

automatically modifying the actual table schema for the database system according to the re-populated metadata schema; and

automatically populating the modified actual table schema with the data.

116. (Amended) The computer system of Claim 113, wherein the computer program further includes computer instructions for:

automatically modifying one or more aggregates according to the re-populated metadata schema; and

automatically modifying one or more query mechanisms according to the re-populated metadata schema.

117. The computer system of Claim 115, wherein the computer program further includes computer instructions for:

modifying one or more tables in the actual table schema.

118. The computer system of Claim 117, wherein the computer program further includes computer instructions for:

adding one of more of the tables;

deleting one or more of the tables;

adding one or more columns to the tables; and

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deleting one or more of the columns from the tables.

119. The computer system of Claim 118, wherein the tables include any of the following: one or more fact tables, one or more dimension tables, or one or more aggregate tables.

120. The computer system of Claim 113, wherein the computer program further includes computer instructions for:

modifying one or more indices in the database system.

D² 121. A computer-readable storage medium comprising a database system computer program executable by one or more server computers connected to one or more client computers, the database system computer program comprising computer instructions for:

accessing at least one description, wherein the description describes a database system;

populating a metadata schema with the description;

automatically generating the database system according to the populated metadata schema; and

using the database system according to the populated metadata schema.

122. The computer-readable storage medium of Claim 121, wherein the database system computer program further comprises computer instructions for:

automatically generating an actual table schema for the database system according to the populated metadata schema; and

automatically populating the actual table schema with the data.

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123. (Amended) The computer-readable storage medium of Claim 121, wherein the database system computer program further comprises computer instructions for:

automatically generating one or more aggregates according to the populated metadata schema; and

automatically generating one or more query mechanisms according to the populated metadata schema.

124. The computer-readable storage medium of Claim 121, wherein the database system computer program further comprises computer instructions for:

querying the database system; and

generating one or more reports with the database system.

125. The computer-readable storage medium of Claim 121, wherein the database system computer program further comprises computer instructions for:

accessing a modified description, wherein the modified description includes the description and one or more modifications to the description;

re-populating the metadata schema with the modified description;

automatically modifying the database system according to the re-populated metadata schema; and

using the database system according to the re-populated metadata schema.

126. The computer-readable storage medium of Claim 125, wherein data in the database system is not lost during the modification.

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127. The computer-readable storage medium of Claim 125 wherein the database system computer program further comprises computer instructions for:

automatically extracting data from one or more source databases according to the re-populated metadata schema;

automatically converting the data into one or more modified data formats according to the re-populated metadata schema; and

automatically populating the database system with the data according to the populated metadata schema.

128. The computer-readable storage medium of Claim 125, wherein the database system computer program further comprises computer instructions for:

automatically modifying the actual table schema for the database system according to the re-populated metadata schema; and

automatically populating the modified actual table schema with the data.

129. (Amended) The computer-readable storage medium of Claim 125, wherein the database system computer program further comprises computer instructions for:

automatically modifying one or more aggregates according to the re-populated metadata schema; and

automatically modifying one or more query mechanisms according to the re-populated metadata schema.

130. The computer-readable storage medium of Claim 128, wherein the database system computer program further comprises computer instructions for:

modifying one or more tables in the actual table schema.

131. The computer-readable storage medium of Claim 130, wherein the database system computer program further comprises computer instructions for performing any of the following acts:

- adding one or more of the tables;
- deleting one or more of the tables;
- adding one or more columns to the tables; and
- deleting one or more of the columns from the tables.

132. The computer-readable storage medium of Claim 125, wherein the database system computer program further comprises computer instructions for:

- modifying one or more indices in the database system.

Please add new claims 133-156 as follows:

133. (New) A method of generating one or more database systems, the method comprising:

- providing a metadata system that includes a metadata schema, a facility for entering instructions into the metadata schema, and a facility for manipulating the metadata schema;
- receiving instructions from a user, wherein the instructions are entered into the metadata schema and are used to create a business database system;
- automatically generating the business database system according to the instructions contained in the metadata schema such that the business database system is well-formed;
- loading data into the business database system according to the instructions contained in the metadata schema; and

operating on the business database system according to the instructions contained in the metadata schema.

134. (New) The method of claim 133, wherein automatically generating the business database system further comprises:

automatically generating tables according to the instructions.

135. (New) The method of claim 133, wherein loading data into the business database system further comprises:

extracting data from sources specified in the instructions;

loading the data into staging tables; and

loading the data from the staging tables into the business database system based on semantic definitions provided in the instructions.

136. (New) The method of claim 133, further comprising:

building aggregate tables according to the instructions.

137. (New) The method of claim 133, wherein operating on the business database system further comprises:

receiving further instructions from a user to define a query mechanism; and

generating queries according to the further instructions.

138. (New) The method of claim 133, wherein operating on the business database system further comprises:

generating reports according to the instructions.

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139. (New) The method of claim 133, further comprising:
receiving a modification of the metadata schema; and
automatically adjusting the business database system according to the modification.

140. (New) The method of claim 133, further comprising:
wherein the instructions provide semantic definitions; and
wherein the business database system is automatically generated using the semantic definitions such that the business database system is well-formed.

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141. (New) A computer system, comprising:
a computer including a processor and a memory;
a computer program stored in the memory and executed by the processor, wherein the computer program includes instructions for:

providing a metadata system that includes a metadata schema, a facility for entering instructions into the metadata schema, and a facility for manipulating the metadata schema;

receiving instructions from a user, wherein the instructions are entered into the metadata schema and are used to create a business database system;

automatically generating the business database system according to the instructions contained in the metadata schema such that the business database system is well-formed;

loading data into the business database system according to the instructions contained in the metadata schema; and

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operating on the business database system according to the instructions contained in the metadata schema.

142. (New) The computer system of claim 141, wherein the computer program further includes computer instructions for:

automatically generating tables according to the instructions.

143. (New) The method of claim 141, wherein the computer program further includes computer instructions for:

extracting data from sources specified in the instructions;

loading the data into staging tables; and

loading the data from the staging tables into the business database system based on semantic definitions provided in the instructions.

144. (New) The method of claim 141, wherein the computer program further includes computer instructions for:

building aggregate tables according to the instructions.

145. (New) The method of claim 141, wherein the computer program further includes computer instructions for:

receiving further instructions from a user to define a query mechanism; and

generating queries according to the further instructions.

146. (New) The method of claim 141, wherein the computer program further includes computer instructions for:

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generating reports according to the instructions.

147. (New) The method of claim 141, wherein the computer program further includes computer instructions for:

receiving a modification of the metadata schema; and
automatically adjusting the business database system according to the modification.

148. (New) The method of claim 141, wherein the computer program further includes computer instructions for:

wherein the instructions provide semantic definitions; and
wherein the business database system is automatically generated using the semantic definitions such that the business database system is well-formed.

149. (New) A computer readable storage medium encoded with software instructions, wherein execution of the instructions comprises:

providing a metadata system that includes a metadata schema, a facility for entering instructions into the metadata schema, and a facility for manipulating the metadata schema;

receiving instructions from a user, wherein the instructions are entered into the metadata schema and are used to create a business database system;

automatically generating the business database system according to the instructions contained in the metadata schema such that the business database system is well-formed;

loading data into the business database system according to the instructions contained in the metadata schema; and

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operating on the business database system according to the instructions contained in the metadata schema. 1

150. (New) The computer readable storage medium of claim 149, wherein execution of the instructions further comprises:

automatically generating tables according to the instructions.

151. (New) The computer readable storage medium of claim 149, wherein execution of the instructions further comprises: E

extracting data from sources specified in the instructions;

loading the data into staging tables; and

loading the data from the staging tables into the business database system based on semantic definitions provided in the instructions.

152. (New) The computer readable storage medium of claim 149, wherein execution of the instructions further comprises:

building aggregate tables according to the instructions.

153. (New) The computer readable storage medium of claim 149, wherein execution of the instructions further comprises:

receiving further instructions from a user to define a query mechanism; and

generating queries according to the further instructions.

154. (New) The computer readable storage medium of claim 149, wherein execution of the instructions further comprises:

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generating reports according to the instructions.

155. (New) The computer readable storage medium of claim 149, wherein execution of the instructions further comprises:

receiving a modification of the metadata schema; and

automatically adjusting the business database system according to the modification.

156. (New) The computer readable storage medium of claim 149, wherein execution of the instructions further comprises:

wherein the instructions provide semantic definitions; and

wherein the business database system is automatically generated using the semantic definitions such that the business database system is well-formed.

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